

WHAT IS CLAIMED IS:

1. An instrument panel comprising:  
  
a thermoplastic base substrate having a first surface and an opposing second surface;  
  
a door portion defined by a tear seam notch in at least one of said first surface and said second surface of said base substrate, said tear seam notch defining a periphery of said door portion; and  
  
at least one hinge portion defined by a plurality of tear seam notches in at least one of said first surface and said second surface of said base substrate, each said hinge portion interrupting said door portion tear seam notch so that said door portion tear seam notch is not continuous.
2. An instrument panel in accordance with Claim 1 wherein said hinge portion tear seam notches are substantially orthogonal to said door portion tear seam notch.
3. An instrument panel in accordance with Claim 1 wherein said hinge portion tear seam notches extend from said door portion tear seam notch away from said door portion.
4. An instrument panel in accordance with Claim 1 wherein said hinge portion tear seam notches extend from inside said door portion to a location outside said door portion.
5. An instrument panel in accordance with Claim 1 wherein said hinge portion tear seam notches extend from inside said door portion to said door portion tear seam notch.
6. An instrument panel in accordance with Claim 1 wherein said hinge portion tear seam notches comprise a curved shape.

7. An instrument panel in accordance with Claim 1 wherein said door portion comprises a plurality of segments, said segments defined by said door portion tear seam notch and at least one segment tear seam notch, each segment tear seam notch intersecting said door portion tear seam notch.

8. An instrument panel system comprising an instrument panel and an airbag, said air bag positioned adjacent said instrument panel, said instrument panel comprising:

a thermoplastic base substrate having a first surface and an opposing second surface;

a door portion defined by a tear seam notch in at least one of said first surface and said second surface of said base substrate, said tear seam notch defining a periphery of said door portion; and

at least one hinge portion defined by a plurality of tear seam notches in at least one of said first surface and said second surface of said base substrate, each said hinge portion interrupting said door portion tear seam notch so that said door portion tear seam notch is not continuous.

9. An instrument panel system in accordance with Claim 8 wherein said hinge portion tear seam notches are substantially orthogonal to said door portion tear seam notch.

10. An instrument panel system in accordance with Claim 8 wherein said hinge portion tear seam notches extend from said door portion tear seam notch away from said door portion.

11. An instrument panel system in accordance with Claim 8 wherein said hinge portion tear seam notches extend from inside said door portion to a location outside said door portion.

12. An instrument panel system in accordance with Claim 8 wherein said hinge portion tear seam notches extend from inside said door portion to said door portion tear seam notch

13. An instrument panel system in accordance with Claim 8 wherein said hinge portion tear seam notches comprise a curved shape.

14. An instrument panel system in accordance with Claim 8 wherein said door portion comprises a plurality of segments, said segments defined by said door portion tear seam notch and at least one segment tear seam notch, each segment tear seam notch intersecting said door portion tear seam notch.

15. An instrument panel system in accordance with Claim 8 wherein said instrument panel further comprises an intermediate layer adjacent said second surface of said base substrate, said intermediate layer comprising a resilient material.

16. An instrument panel system in accordance with Claim 15 wherein said resilient material comprises a foam material.

17. An instrument panel system in accordance with Claim 15 wherein said instrument panel further comprises an outer layer adjacent said intermediate layer.

18. A thermoplastic panel comprising a hidden airbag door, said panel further comprising:

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a thermoplastic base substrate having a first surface and an opposing second surface;

a tear seam notch in at least one of said first surface and said second surface of said base substrate, said tear seam notch defining a periphery of said airbag door; and

at least one hinge portion defined by a plurality of tear seam notches in at least one of said first surface and said second surface of said base substrate, each said hinge portion interrupting said airbag door tear seam notch so that said airbag door tear seam notch is not continuous.

19. A thermoplastic panel in accordance with Claim 18 wherein said hinge portion tear seam notches are substantially orthogonal to said airbag door tear seam notch.

20. A thermoplastic panel in accordance with Claim 18 wherein said hinge portion tear seam notches extend from said airbag door tear seam notch away from said airbag door.

21. A thermoplastic panel in accordance with Claim 18 wherein said hinge portion tear seam notches extend from a location in said airbag door to a location outside said airbag door.

22. A thermoplastic panel in accordance with Claim 18 wherein said hinge portion tear seam notches extend from a location in said airbag door to said airbag door tear seam notch.

23. A thermoplastic panel in accordance with Claim 18 wherein said hinge portion tear seam notches comprise a curved shape.

24. A thermoplastic panel in accordance with Claim 18 wherein said airbag door comprises a plurality of segments, said segments defined by said airbag door tear seam notch and at least one segment tear seam notch, each segment tear seam notch intersecting said airbag door tear seam notch.

25. A thermoplastic panel in accordance with Claim 18 wherein said hinge portions are flexible from about 100°C to about -40°C.